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# Participatory approaches to the conservation of sea turtles in Myanmar

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## ABSTRACT

Conservation of sea turtles has been initiated in Myanmar since 1963. The conservation activities were not profound until 1997 when Myanmar became a member of Association of South East Asian Nations (ASEAN). Since Myanmar became a member of Southeast Asian Fisheries Development Center (SEAFDEC), the integrated fisheries development and conservation of the resource activities and implementation have been boosted appropriately. In particular in the activities of sea turtle conservation and protection, survey of turtle Islands, investigation of landing species and seasons, and recording of annual nesting population and successive hatchling releasing were conducted. Also dissemination of awareness has promoted not to harm the species, migratory routes and habitats. Through implementing of such conservation activities, the Department of Fisheries (DOF) attempts to increase the awareness of local people and fishermen in protection of sea turtles and its role in the sustainability of the balance of ecosystem. In the process of conservation and protection, the prerequisites are the proper policy arrangement, collaboration among the local people and institutions that undertake the motivation. In other ways the participatory approaches will be most effective in the implementation of the activity. Also the information on sea turtles conservation and protection is important to achieve the objectives.

**KEYWORDS:** sea turtle, conservation and protections, public awareness, participatory

## INTRODUCTION

In Myanmar, the extensive coastal area in the west stretching from the north to the south faces the Bay of Bengal in the Indian Ocean, Gulf of Mottama (Martaban), and the Andaman Sea. There were reports and records of turtle nesting along these coastal areas and on the islands. Thameehla Island (Diamond Island) is the first island designated for turtle conservation purposes since the pre-war period. At this island, since 1963, the Department of Fisheries (DOF) has been undertaking to introduce sea turtle conservation and safeguard turtle nests and release hatchlings back to the sea. At the same time several other turtle islands have been designated and 35 nesting sites were recorded. However, only about a dozen of these could be reached for general observation, and the conservation activities were conducted in six of these beaches.

Currently, for the conservation of sea turtles Myanmar works with the Southeast Asian Fisheries Development Center (SEAFDEC) through the guidance of Association of South East Asian Nations (ASEAN) conservation program of sea turtles. In 2001 the activities were enhanced by extending collaboration in line with the "Memorandum of Understanding on Conservation and Management of Marine Turtles and their Habitats of Indian Ocean and Southeast Asia" (IOSEA-MoU) with the international turtle conservation program. The conservation activities

were implemented by the Department of Fisheries through consultation with IOSEA and SEAFDEC within the objective framework to protect sea turtles species and reduce mortality while increasing propagation.

## TURTLE SPECIES

Generally 5 species of sea turtles were found and recorded. These were Loggerhead turtle (*Caretta caretta*), Green turtle (*Chelonia mydas*), Hawksbill turtle (*Eretmochelys imbricata*), Olive ridley turtle (*Lepidochelys olivacea*) and Leatherback turtle (*Dermochelys coriacea*).

## CONSERVATION OF SEA TURTLES

DOF is deeply aware of the endangered and vulnerable state of sea turtles so that the conservation program has been set up to focus on the discovery and safeguarding of turtle landing beaches, nesting sites and protect turtles from harmful, target fishing and exploitation of turtle eggs.

Generally the conservation activities were carried out by letting the eggs hatch in the natural nest, or by transplanting of turtle eggs into man-made nests and providing intensive care.

Being highly migratory species, the migratory route of turtles has been detected by tagging the landing turtles with Inconel Tags. The program was supported and assisted by the SEAFDEC/MFRDMD.

In order to understand the genetic diversity of the turtles visiting turtle beaches in Myanmar, the investigation of Deribo Nucleic Acid(DNA) characteristics were detected from tissue samples from 60 green turtles.

### LEGISLATION AND DIRECTIVES

Myanmar Fisheries Laws include provisions to protect turtle landing beaches and utilizing of turtle eggs, meat and turtle shell. Also the Department of Fisheries has recently undertaken to investigate new turtle beaches in all coastal area and islands. Occasional directives have been issued to protect and sustain the landing beach. Since 1963, DOF undertakes the conservation and protection of sea turtles. DOF is a competent authority regarding matters related to Fisheries Resources, Fisheries Products, Aquatic Living Things and Aquatic Endangered Species.

In the Fisheries Act (III – 1905), protection for the turtle hatching areas and turtles was included and anyone trespassing on these areas without official consent is effectively penalized.

In 1986, the Ministry of Livestock Breeding and Fisheries promulgated notification regarding sea turtles conservation and protection.

According to the Myanmar Marine Fisheries Law (1990) promulgated by the State Law and Order Restoration Council included under mentioned section in Chapter I , Title and Definition .

- **Section 2(g): *Fish*** means all aquatic organisms spending whole of or a part of their live cycle in the water, their spawns, larvae, fry and seeds. This expression also includes aquatic plants, their seedlings and seeds;
- **Section 2(r): *Marine Products*** means fishes obtained from the sea, aquatic organisms, their excreta, scales, bones, skins, plants, non-living things. This expression also includes sea turtle and eggs, crocodile and eggs, crab, ambergris, oyster shell, clam shell, mussel, coral, sea sponge, sea weed, moss, algae etcetera;

Prohibition, Offences and Penalties are also included in that Law.

In 1993, the Department of Fisheries issued the Notification No.2/93 for "Sea Turtle Conservation".

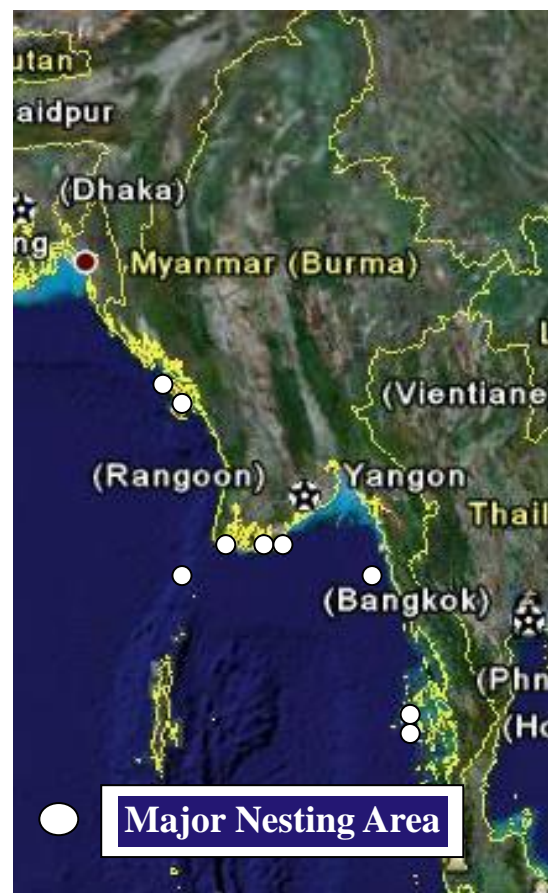


Fig.1 Map showing the major nesting areas of sea turtles in Myanmar

### INTERACTION OF SEA TURTLES AND FISHING ACTIVITIES

DOF has also prohibited the use of fishing gears having harmful effects on sea turtles. The measures are being well encouraged. It is important that fishery workers make and learnt how to use a type of fishing gear, which will be effective in catching fish but harmless for turtles.

Some villagers and fishermen inform that when they caught turtles in their fishing nets they released the turtles back into the sea. Moreover, fishermen have been instructed to release turtles back into the sea unharmed if they are caught accidentally in their fishing gears.

The large-scale turtle mortality is the result of incidental catch in fishing gears. To counteract these arguments quantitative information on observed captures on sea turtles and the rate of mortality of these individual offshore fishing operations is absolutely essential. In the interim, strict enforcement of Myanmar Marine Fisheries Law (1990), which prohibits the shore along the coast, is needed.

Fishing activities are of three types namely:

#### **A, In- shore Fisheries**

-5 nautical miles from shore (in *Rakhine coastal*)

-10 nautical miles from shore (in *Ayeyarwady & Taninthayi*)

- No more than 12 h.p engine & 30 Feet length of the boat

#### **b, Off-shore fisheries**

- Outer area of inshore to end of EEZ

- More than 12 H.P engine boat

#### **c, Small-scale fisheries**

-Along the shores for livelihood of local fishermen and their family

In offshore fisheries trawls, gill nets, purse seines, stowed nets, long-lines and traps are common in Myanmar. In inshore fisheries purse seines, stowed nets, drift gill nets, trammel nets and traps are used. In case of local fisheries beach surrounding nets, drift gill nets, trammel nets and traps are commonly utilized.

A blanket ban on near shore-mechanized fishing will significantly reduce the turtle mortality. In Myanmar there is no intentional catching of sea turtles in the sea. However, there are cases of sea turtle being incidentally caught and injured during the fishing season. There are cases of killing and consuming of sea turtles which came to take shelter because of adverse weather conditions. Eggs are also poached and consumed.

In some areas the fishermen believe that killing and eating of turtle meat can have adverse effect on their income, consider unlucky and mishaps could befall them.

The fishermen and their families living near the turtle conservation stations of DOF, reported to DOF and the turtles which are captured incidentally were treated and released showing their cooperation with DOF.

To lessen the death of sea turtles due to fishing activities the DOF has laid down the following guide lines:-

- to cooperate more with Forestry Department, Universities and Sciences under Higher Education Department, Myanmar Fisheries Federation (MFF) , local authorities and Non Governmental Organizations (NGOs) which participate in the conservation activities
- to promote the cooperation between fishing entrepreneurs, fishermen, local fishermen regarding the sea turtle conservation
- to identify programs for cooperation with International and Regional agencies

Although DOF is carrying out the sea turtle conservation under many difficulties it is also (with whatever source available) protecting the

decrease in population of sea turtles because of death and injury caused by the fishing activities. One of the main factors which causes decrease in population of sea turtles is the fishing activities in the sea, and draws awareness to the importance of the people living in the coastal areas to cooperate in conservation activities, in order to know the population of the sea turtles.

DOF understanding the importance of sea turtles will continue to carry out the activities such as:-

- i. organizing the concerned people to cooperate in the conservation activities
- ii. collect data on population
- iii. to get feedback from the different levels in the coastal areas

#### **PARTICIPATORY APPROACHES ON THE CONSERVATION OF SEA TURTLES**

To reach the goal on the conservation of sea turtles, the prerequisites are listed as follows:

- a. Knowing the nesting beach and landing period for appropriate species.
- b. Avoid disturbances that may disrupt turtles from visiting the beach for nesting
- c. Creation of ambient environment for the turtle for nesting on the beach
- d. Safe guard the turtles visit to the beach and protect the eggs from exploitation for delicacy food and utilizing turtle products for handy crafts and utilities.
- e. Secure turtle beaches especially in the nesting period from turtle hunters and other activities carried out the beach
- f. Enhance the awareness program of the community people on conservation, and render protection and prevention of sea turtle.
- g. Extend research and development inputs on the evaluation of turtle visiting the particular beach and efficiency of egg hatching *in situ* and in the transplanted hatching sites.

The DOF is deeply aware of such necessities for effective sea turtle conservation. The following awareness activities have so far been undertaken in its input capacity. Through these, participation from the communities is acquired and somehow provides effective conservation of sea turtles.

- a. Distribution of pamphlets and posters
- b. Erection of signboards at landing sites, market places and at the central place of the community to educate the public.
- c. Radio and television broadcasting to enhance awareness program on turtle conservation in Myanmar and English languages.

- d. Conduct capacity building training and holding of talks on the conservation of sea turtles.
- e. Distribute questionnaires to all stakeholders and tag wanted posters at fishery communities for acquiring information and feedback from the majority.
- f. Organized local community to participate in safeguarding the nesting turtles at breeding seasons, protect turtle nests from destruction by the exploiters and permit escape of accidentally caught in fishing nets.

## CONCLUSION

Currently DOF has discovered several turtle nesting beaches along the coastal area. However, only six of these have been emphasized to extend conservation inputs. Even though the Department of Fisheries has its insight awareness, the inadequacies of human capacity, infrastructure and minimal allocation of capital are the constraints to further extend its activities. In particular, the following areas of constraint can be listed –

1. Inadequacy of human capacity,
2. Less Research and Development inputs
3. Insufficient management and monitoring of turtle nesting beach from violation of conservation matters
4. Inadequate infrastructure for the regular monitoring and management of rookeries and turtle beach
5. Require firm cooperation of relevant government agencies, local (Non Governmental Organizations) NGOs and International NGOs who are working for the wildlife conservation.
6. Inadequate and insufficient information and communication systems

In this context, sea turtle conservation activities could be further accelerated if the aforementioned are fulfilled. Then the participatory approach from all level stake holders can also be achieved.

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